1979

College of Technology, Kevin Street , Open Days 1979 : pamphlet

City of Dublin Vocational Educational Committee

DUBLIN INSTITUTE OF TECHNOLOGY

COLLEGE of TECHNOLOGY

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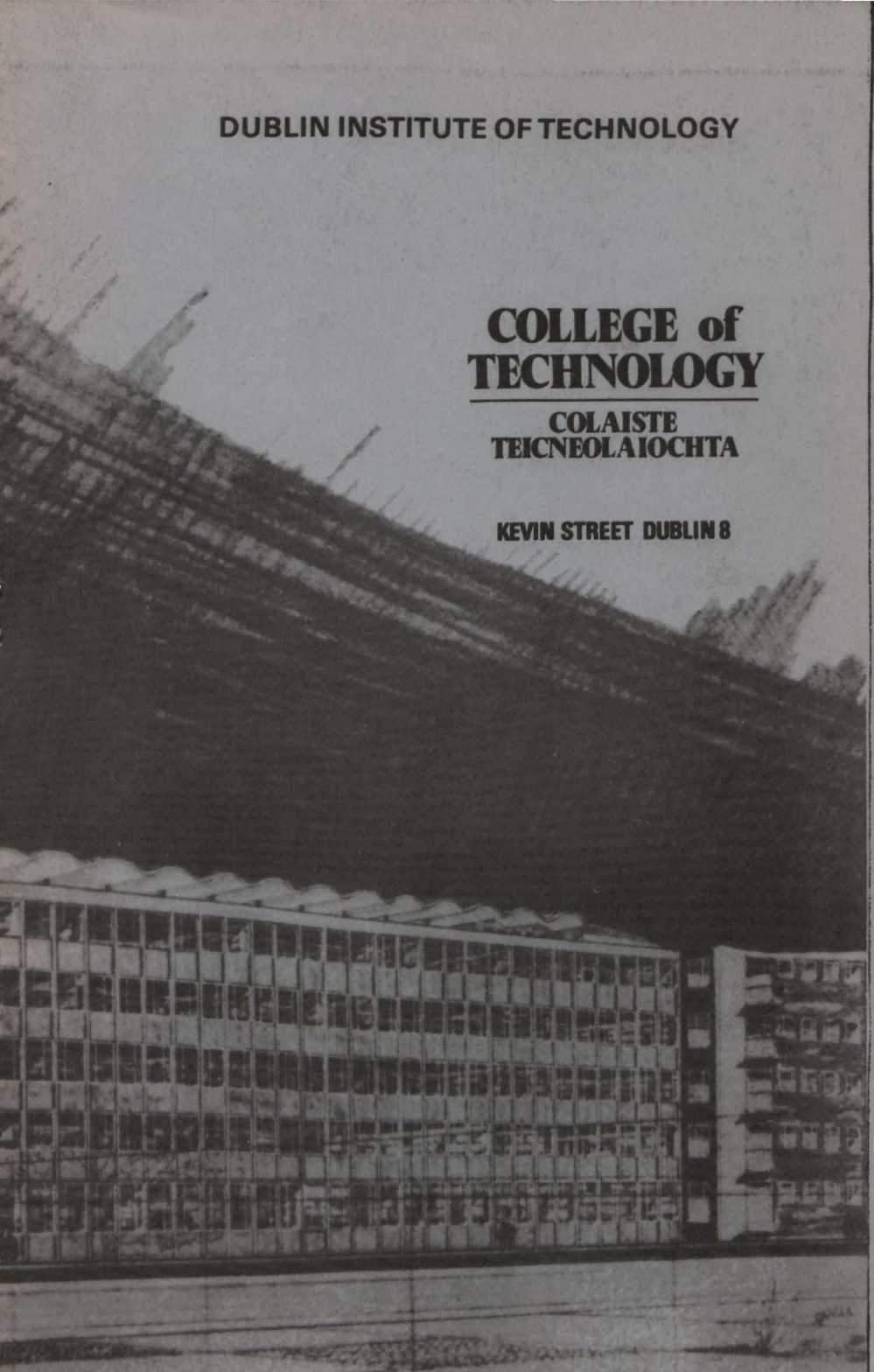
KEVIN STREET DUBLIN 8



Open Days — 1979

In case of accident or illness please go to the Medical Room, Room No. 225, on the second floor.

Medical Officer : Dr. D. Nolan.

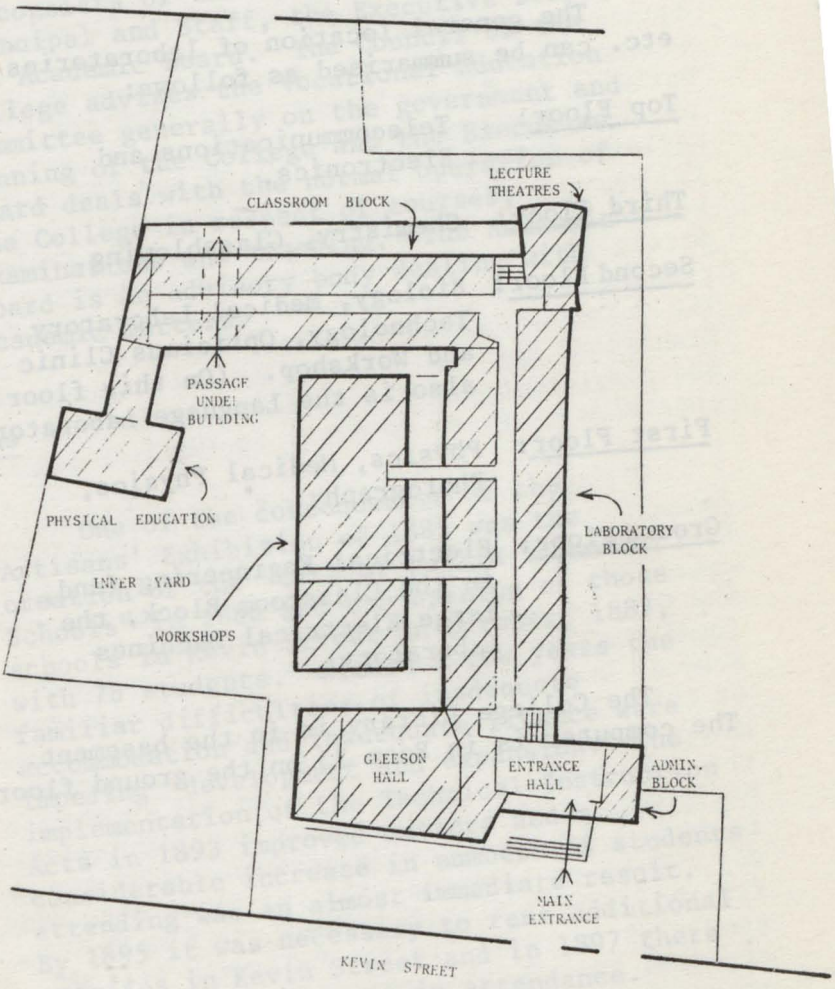
W E L C O M E

Guide to the Building:

To enable you to make your way around the building a simplified plan is provided on page 2. The following brief description in conjunction with this plan will enable you to understand the lay-out of the College.

The front entrance foyer constitutes the ground floor of the Administration Block which contains, on the first floor: the administrative offices; on the second floor: staff common room and conference room; on the third floor: students' common room and Students' Union offices; and on the top floor: the canteen. Beside the entrance foyer on the ground floor is the Gleeson Hall.

From the entrance hall, beyond the stairwell, a corridor leads through the ground floor of the Laboratory Block to the second stairwell. The lecture theatres are located on each floor beside this second stairs. A corridor to the left from there leads through the Classroom Block (although there are only laboratories on the ground floor of this block!) to the back entrance, which is on the passage-way under the building leading to the gate on Camden Row. On the opposite side of this passage-way and towards the inner yard is the Physical Education Block containing, on the ground floor, the Swimming Pool, and overhead, the Gymnasium. The Workshops, in a single storey structure which runs beside the Laboratory


LECTURE
THEATRES
CLASSROOM BLOCK
PASSAGE
UNDER
BUILDING
PHYSICAL EDUCATION
INNER YARD
WORKSHOPS
LABORATORY
BLOCK
GLEESON
HALL
ENTRANCE
HALL
ADMIN.
BLOCK
MAIN
ENTRANCE
KEVIN STREET

Block in the inner yard, are reached by two short corridors to the left off the main ground floor corridor from the entrance hall.

The general location of laboratories etc. can be summarised as follows:

Top Floor:	Telecommunications and Electronics.
Third Floor:	Chemistry, Glassblowing.
Second Floor:	Biology, Medical Laboratory Technology, Opticians Clinic and Workshop. (On this floor also is the Language Laboratory)
First Floor:	Physics, Medical Physics, Photography.
Ground Floor:	Electrical Engineering (and, in the Classroom Block, the large Electrical Machines Laboratory).

The College Library is in the basement. The computer is in Room 33 on the ground floor.

The College

The College is one of six in the Dublin Institute of Technology under the City of Dublin Vocational Education Committee. It consists of the College Council, the Principal and Staff, the Executive Board and the Academic Board. The Council of the College advises the Vocational Education Committee generally on the government and running of the College and the Executive Board deals with the normal operation of the College in respect of courses, examinations and teaching. The Academic Board is an advisory body dealing with Academic matters.

Origins

One of the consequences of the Artisans' Exhibition of 1885 was the creation of the "City of Dublin Technical Schools" in 1886 and the opening of those schools in Kevin Street in October, 1887, with 78 students. Within a few years the familiar difficulties of inadequate accommodation and inadequate finance were impeding development and expansion. The implementation of the Technical Instruction Acts in 1893 improved matters and a considerable increase in numbers of students attending was an almost immediate result. By 1895 it was necessary to rent additional premises in Kevin Street and in 1897 there were over 900 students in attendance.

An extension to the original building was completed in 1901 but again by 1903/4 the Governors were reporting that "hundreds" had to be refused admission. Eventually the situation resulted among other things, in the acquisition of No. 12 Rutland (now Parnell) Square for Commercial Classes, and the construction (1908-10) of another school building in Bolton Street to relieve the pressure. These have since become the College of Marketing and Design and the College of Technology, Bolton Street, respectively, and what remained in the Kevin Street premises determined the subsequent character of our activities, viz., courses in the Sciences, in Para-Medical Work, in Electrical Engineering, and in Telecommunications and Electronics (a Radio Officers course was in operation at least as early as 1918).

With the introduction of the Vocational Education Act of 1930, the Technical Institute, Kevin Street, together with its offspring in Bolton Street, and Parnell Square came under the City of Dublin Vocational Education Committee, and the development of Vocational Schools around the city prevented a recurrence of the old accommodation problem although a minor extension was necessary in 1944. After the war, however, things changed and in the early 1950's it was clear that a major expansion in demand for technical education was on the way. Between 1956 and 1962 the plans were made for the present building which was finally completed in 1968. In the following year we acquired additional premises in Pleasant Street to house classes for Electrical Apprentices.

Departments:

The College is organised in seven departments as follows: Mathematics, Physics, Chemistry and Biology, Electrical Installation Work, Electrical Engineering Telecommunications Engineering, General Studies.

Department of Mathematics:

This Department is involved in the full-time B.Sc. Degree course providing classes in Computation, Computer Programming, Numerical Analysis, Mathematical and Applied Statistics as well as Pure Mathematics including Real and Complex Analysis, Algebra, Vector Analysis. Some options are also provided in Applied Mathematics e.g. Electrodynamics, Classical Mechanics and Quantum Mechanics.

Evening courses are operating for students seeking Membership of the Institute of Statisticians or the Institute of Mathematics and its Applications.

The Department also provides courses in Mathematics at trade, technician and professional levels for most courses in the College and these courses, while exhibiting a common core of mathematics at each level, have syllabuses designed with the interests of the particular students in mind and with a view to solving their problems in their special fields of study.

The Head of the Department is J.M. Forde, B.E., C.Eng.

Department of Physics:

The Department of Physics is responsible for the teaching of Pure and Applied Physics, Photography, and Ophthalmic Optics. The main Physics area is located on the first floor of the building, and includes six laboratories, of which two are for general elementary physics, one is for more advanced general experimental work, one is for optical experiments, one is for medical physics, and one for laser experiments and research. A complex of darkrooms is adjacent to the optical and laser laboratories, and the photographic section has in addition a photographic studio complete with colour processing facilities on the ground floor of the building. The laboratory for Ophthalmic Optics is on the second floor of the building.

The Department offers courses to Degree and post degree level in addition to courses leading to Diplomas, Technician Diplomas and Certificates in Applied Science, Ophthalmic Optics, Medical Physics and Photography.

Research carried out in the Department of Physics over recent years covers aspects of Medical Physics, in collaboration with various Dublin Hospitals, studies of infra-red and dye lasers, environmental physics studies, and/

collaboration with European establishments in elementary particle physics studies. There are several post-graduate students working for M.Sc. or Ph.D. degrees in the Department in one or other of these areas.

The Head of Department is J.K. Taaffe, B.Sc., M.Sc., M.Inst.P., M.B.A., H.Dip.Ed., Dip.in Prod., Barrister-at-Law.

Department of Chemistry & Biology:

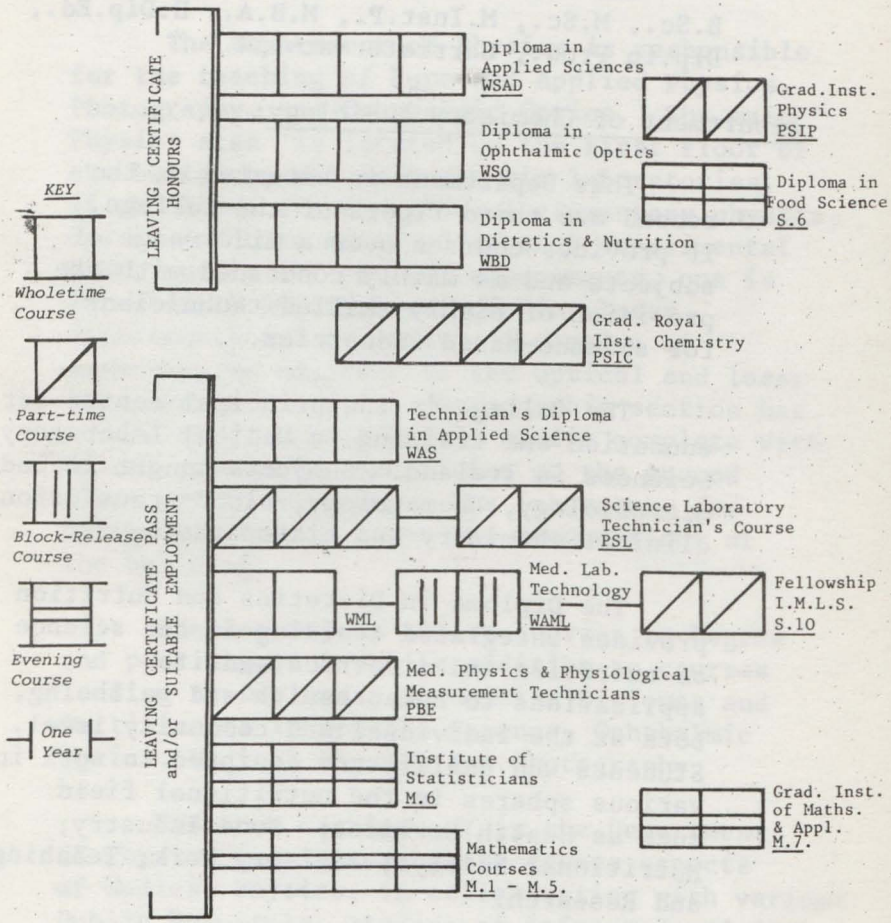
This Department is situated on the second and third floors of the College. It provides courses over a wide range of subjects and is mainly concerned with the provision of highly skilled technicians for science-based industries.

The College is the principal centre for education and training in Medical Laboratory Sciences in Ireland. Subjects taught include microbiology, haematology, blood-transfusion, clinical chemistry and histopathology.

The Diploma in Dietetics and Nutrition provides integrated training in the science of nutrition and dietetics and its applications to human health and wellbeing, both at the individual and community level. Students who qualify are equipped to work in various spheres in the nutritional field such as Health Services; Food Industry; Nutritional Surveys; Advisory Work; Teaching and Research.

The experiments which are on display illustrate different aspects of the work of the Department. It will be clear that while fundamental studies are regarded as essential/

SCIENCE & PARA-MEDICAL COURSES



Note: For precise details of admission requirements for individual courses the College Prospectus and/or the relevant College Department should be consulted.

the main emphasis in teaching is on the application of the sciences to practical problems in industry and medicine.

The Head of the Department is E.J. Rothery, B.Sc., C.Chem., F.R.I.C., F.I.C.I., M.I.Biol.I.

Department of Electrical Installation Work:

This Department provides courses of education for apprentices and other personnel engaged in the electrical industry. The courses range from evening courses requiring attendance on three evenings per week to full-time courses covering a three year period, see page 18. The Department is at present largely located in the Pleasant Street premises, but it has laboratories and workshops on the ground floor of this building also.

The Head of the Department is M. Farrell, C.Eng., M.I.E.E., M.I.E.I.

Department of Electrical Engineering:

This Department is situated on the ground floor and it caters for Electrical Engineering, particularly heavy current work, at Professional, Technician Engineering, and Technician level. The Department also deals with Control Systems engineering. During the OPEN DAYS the Electrical Machines, Control Systems, Electrical Measurements, Intermediate Electricity and Applied Mechanics Laboratories may be visited.

The Head of the Department is T. Short, C.Eng., M.I.E.E., Ph.D.

Department of Telecommunications Engineering:

The Telecommunications Engineering Department occupies the fourth floor and is concerned with providing courses and teaching services covering the fields of electronic and communication engineering at technician, higher technician, graduate and post-graduate levels.

Technician and higher technician level courses constitute the major part of the work in the department.

In addition to general electronics laboratories, specialised facilities are provided in the following subject areas: television engineering, communication engineering, microwave and radar engineering, digital systems and electronic measurements. Provision is also made for specialised study in the field of marine radio and radar.

The Head of the Department is B.J. O'Connor, C.Eng., M.I.E.R.E.

Department of Languages and Industrial Studies:

The Department of Languages and Industrial Studies provides classes in subjects such as Economics, Management and Industrial Studies, the Use of English and Communication Studies, and Modern Languages on most of the courses of the College. Emphasis is placed, in all these subjects, on their functional relevance to the Technician, the Scientist and the Technologist but the main objectives of the Department are to encourage the student to think for himself, to develop breadth of outlook, flexibility of mind and critical judgement.

In teaching languages modern methods including Audio Visual Teaching and Language Laboratory Practice - are used almost exclusively. Students may pursue to an advanced level a language already studied at school or begin a new language.

The Head of the Department is Miss K. Tierney, M.A.

Chaplains:

There are six Chaplains to the College - three Catholic and one Church of Ireland, one Methodist and one Presbyterian. Their primary concern is the spiritual and moral welfare of the students whom they meet in class and elsewhere as counsellors or spiritual advisors. They occasionally organise seminars and help develop such College activities as would contribute to the wider benefit of the student. In particular, they are co-ordinating the efforts of about fifty students and staff who are associated with the ten-year old "Social Work Group", volunteers who take turns at renovating the homes of needy people in the city.

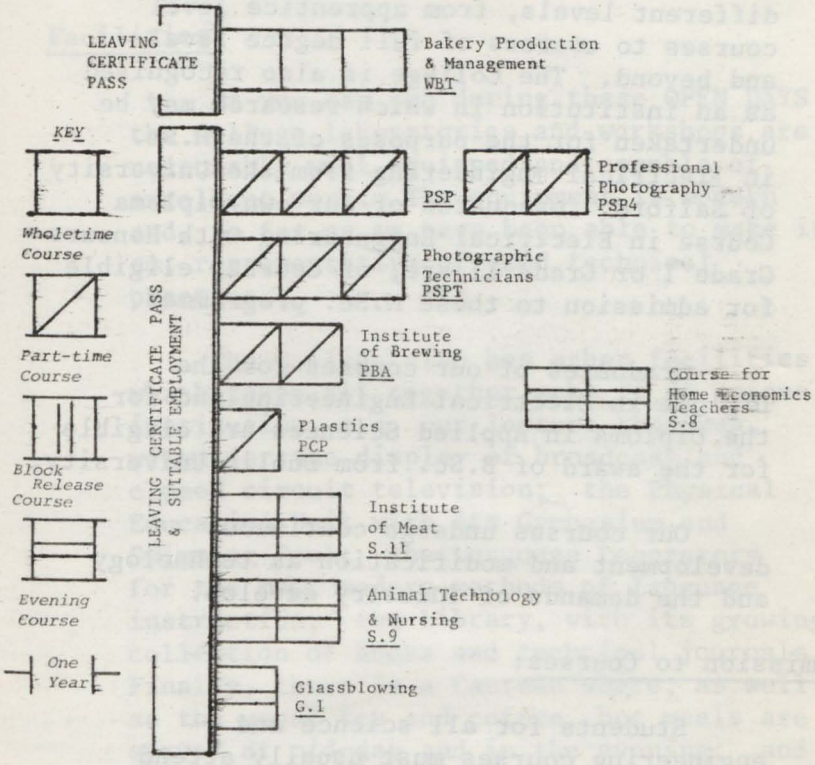
Courses:

The College offers a wide variety of courses but these may be grouped under three general headings: Courses in the Sciences (Mathematics, Physics, Chemistry, Biology, Para-Medical Sciences); Courses in Electrical and Electronic Engineering (Telecommunications, Radar, Electric Power, etc.); and Trade Apprentice Courses. Of the latter by far the largest group are electrical apprentices but we also have cinema apprentices, apprentices to the bakery trade and apprentice dental mechanics. The charts on pages 9, 14, 18, 20 display the general nature of our courses and the staff of the College will be pleased to give you any further information you may require about them.

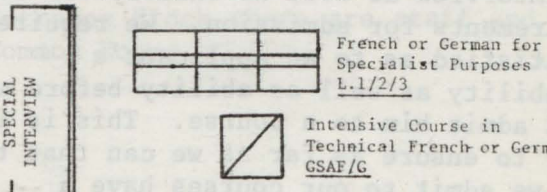
The College is, of course, a teaching institution and our courses are conducted through the medium of lectures, tutorials, laboratory work, and workshop activities, as the subject matter requires. Almost all our day courses contain some non-technical studies, e.g. in foreign languages, in economics, current affairs, etc. In this way we try to ensure that even in the highly technical nature of the bulk of our work a balance is maintained in the education we give our students.

It is always our intention to provide courses which will give the maximum career opportunity to all those who might wish to avail of them and for this reason we provide courses in many different forms.

SOME SPECIAL COURSES



SPECIAL LANGUAGE COURSES



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We have, for example, whole-time courses, part-time courses, block release courses (i.e. a block of whole-time attendance for from six to sixteen weeks each year) and evening courses. We also cover many different levels, from apprentice level courses to courses of full degree level - and beyond. The College is also recognised as an institution in which research may be undertaken for the purposes of the M.Sc. in Electrical Engineering from the University of Salford. Graduates of our own Diploma Course in Electrical Engineering with Honours Grade I or Grade II are, of course, eligible for admission to these M.Sc. programmes.

Graduates of our courses for the Diploma in Electrical Engineering and for the Diploma in Applied Sciences are eligible for the award of B.Sc. from Dublin University.

Our courses undergo continuous development and modification as technology and the demands of industry develop.

Admission to Courses:

Students for all science and engineering courses must usually attend an interview as well as satisfy the academic requirements for admission. We require to be satisfied as to an applicant's suitability as well as ability before we would admit him to a course. This is in order to ensure as far as we can that those whom we admit to our courses have a reasonable chance of completing them successfully. It should be noted that a/

number of our courses are recognised for the purposes of the Local Authorities Higher Education Grant Scheme. For whole-time technician courses certain scholarships are also available.

Facilities:

As you can see during these OPEN DAYS the College laboratories and workshops are reasonably well equipped and capable of excellent work. The equipment is modern and, so far as we have been able to make it so, representative of good technical practice.

The College also has other facilities which taken all together make it an unique institution, e.g. our lecture theatres, wired for the display of broadcast and closed circuit television; the Physical Education Unit with its Gymnasium and Swimming Pool; the Language Laboratory for the most modern methods of language instruction; the Library, with its growing collection of books and technical journals. Finally, there is a Canteen where, as well as the usual tea and coffee, hot meals are served at mid-day and in the evening; and on the second and third floors of the Entrance Block there are staff and student Common Rooms.

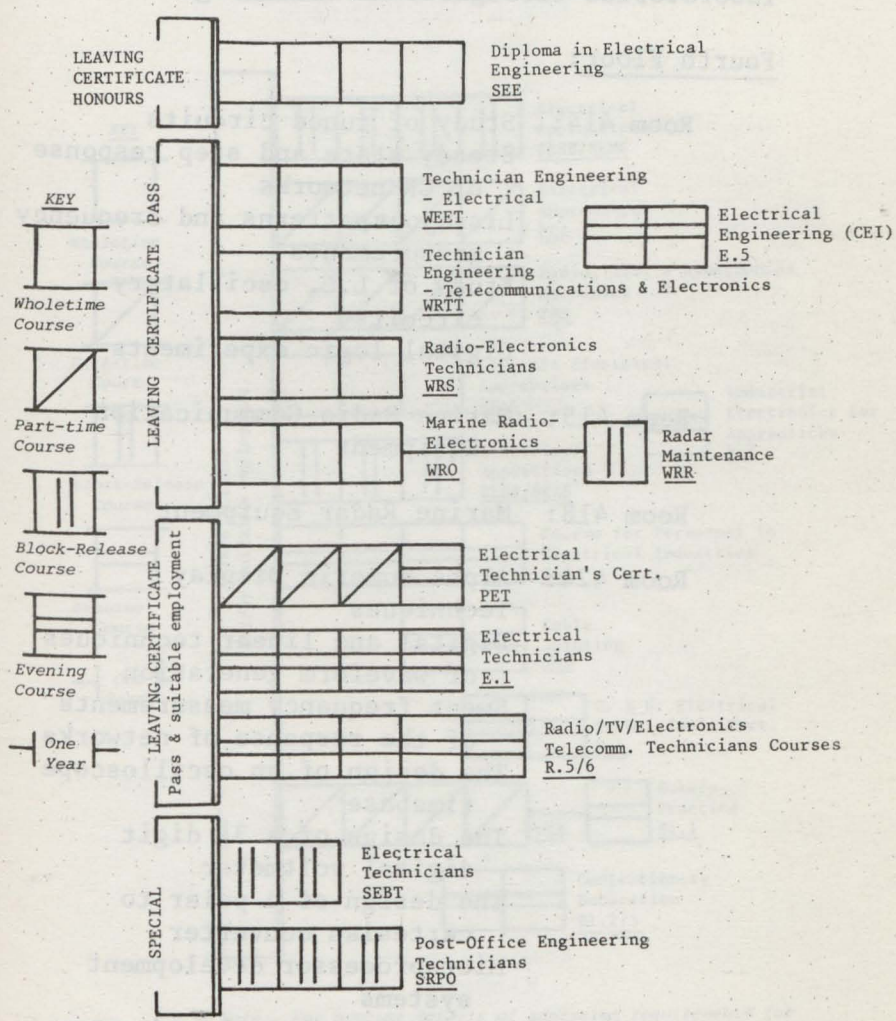
Students:

The current annual enrolment in courses in the College is about 3,200 and of these about 2,500 are enrolled in day classes of one sort or another. The majority of these are boys, but girls are becoming increasingly aware that technical careers are not closed to them. All students of the College, on enrolment, become members of the Students' Union and one of their number is a member of the College Council.

The Students' Union offices are to be found on the third floor of the Administration Block. The Union is administered by students elected by and from the student body.

The College Shop is situated beside the Union Office, and satisfies the stationery and other needs of the students.

ELECTRICAL, ELECTRONIC & TELECOMMUNICATION ENGINEERING COURSES



Note: For precise details of admission requirements for individual courses the College Prospectus and/or the relevant College Department should be consulted.

What you may see:

The following is a brief indication of what may be seen in the various laboratories throughout the building:

Fourth Floor:

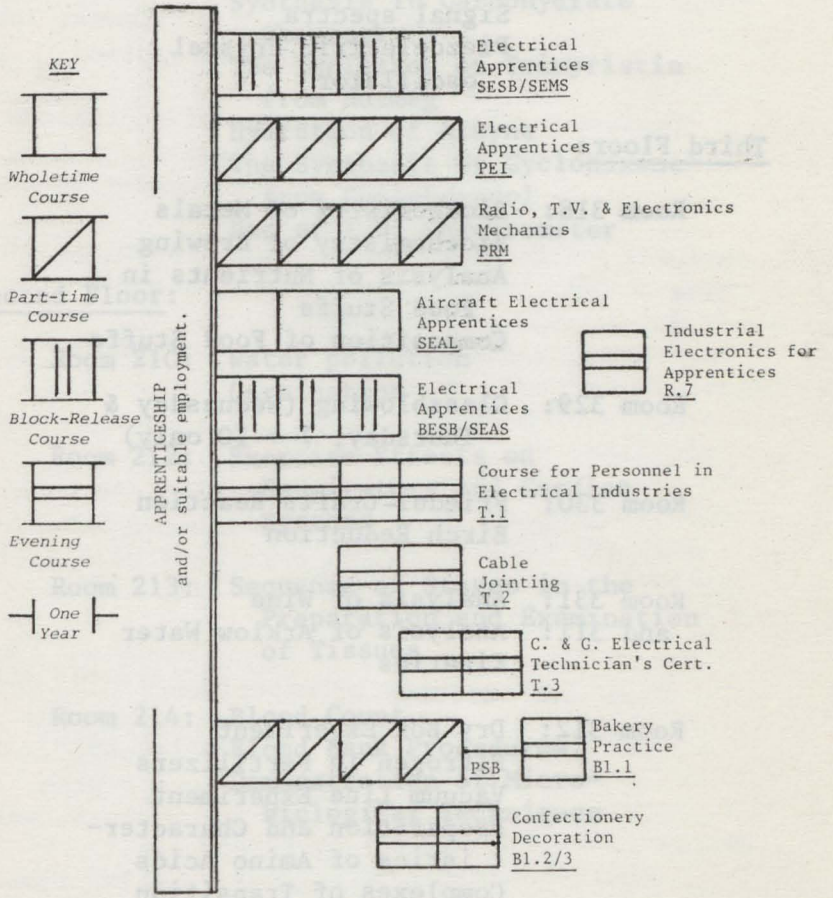
Room 414:
- Study of tuned circuits
- Steady state and step response of CR networks
- Lissajouspatterns and frequency measurements
- Study of L.C. oscillatory circuits
- Digital logic experiments

Room 415:
- Marine Radio Communication Equipment

Room 418:
- Marine Radar Equipment

Room 424:
- Alpha numeric Display Techniques
- Digital and linear techniques of waveform generation
- Swept frequency measurements of the response of networks
- The design of an oscilloscope timebase
- The design of a $3\frac{1}{2}$ digit digital voltmeter
- The design of a polar to cartesian converter
- Microprocessor development systems
- A microprocessor based motor speed control system

COURSES FOR APPRENTICES & CRAFTSMEN



Note: For precise details of admission requirements for individual courses the College Prospectus and/or the relevant College Department should be consulted.

Room 429: Steady state and pulse transmission on lines
Measurements on aerials
Signal correlation measurements
Signal spectra
Piezoelectric crystal oscillator

Third Floor:

Room 318: Biochemistry of Metals
Biochemistry of Brewing
Analysis of Nutrients in Food Stuffs
Composition of Food Stuffs

Room 329: Glassblowing (Wednesday & Thursday, 7 - 10 only)

Room 330: Friedel-Crafts Reaction
Birch Reduction

Room 331: Analysis of Wine
and 311: Analysis of Arklow Water
Kinetics

Room 312: Dry Box Experiment
Nitrogen in Fertilizers
Vacuum Line Experiment
Preparation and Characteristics of Amino Acids
Complexes of Transition Elements
Ion Exchange Analysis
pH/Buffer Experiment
Kinetics of Hydrolysis of a Diazonium Compound

Room 333: Destructive Distillation of Peat
The Synthesis of Sulphathiazole
Synthesis in Carbohydrate Chemistry
The Isolation of Trimyristin from Nutmeg
Hydration of Alkyne
The Synthesis of Cyclohexene from Cyclohexanol
Use of I.R. Spectrometer

Second Floor:

Room 210: Water pollution
Germination

Room 212: Exercise Effects on Respiratory and Cardiac Systems

Room 213: Sequence of Stages in the Preparation and Examination of Tissues

Room 214: Blood Count
Blood Bank Procedures
Demonstration of Microbiological Techniques

First Floor:

Room 110: Temperature coefficient of resistance of a copper coil.
Electrochemical equivalent of copper
The relation between the current passing through a filament lamp and the potential applied across it.
The melting point of napthalene using a thermocouple.
Calibration of an ammeter by a current balance.
Capacitance using a reed switch.
Planck's constant in photo-Electricity.
Velocity of sound by Quincke's Method.
$\frac{e}{m}$ by Thomson's Method.

Demonstrations: Leslie's Cube: Projectiles: Induced E.M.F. showing the concept of a field: Demonstrations with liquid nitrogen

Room 112: A range of experiments illustrating the properties of waves and vibrations, including experiments with light waves, sound waves, water waves and microwaves.
Measurement of reaction time.

Room 113: A range of basic radiation experiments and demonstrations.
Illustration of T.L.D.

Room 134: Fabry-Perot Interferometer (Na Doublet)
Michelson Interferometer (white light fringes)
Michelson Interferometer (Fourier spectroscopy)
Scanning monochromator.

Demonstrations: Geometrical Optics: Holography: Hilger spectrograph.

Room 139: Work in this laboratory involves the design, construction and operation of equipment for the study of electronic processes in materials. Current projects involve (a) Spectroscopic study of dye laser materials (b) preparation and study of the material Cadmium Sulphide. Apparatus: Pulsed nitrogen lasers, and mass spectrometer, vacuum coating plants etc.

Ground Floor:

Room 003: Flow and level control in a Model Process
Position and velocity control in an electro-hydraulic system
Fluid-flow instrumentation
Liquid-level measurement
Pneumatic sequence-control system
Simulation of systems using an Analogue Computer
Temperature Measurement
Calibration of a Pressure Gauge.

Ground Floor:

Room 004:
- Characteristics of d.c. machines
- Characteristics of synchronous machines
- Characteristics of induction machines.
- Verification of basic machine theory using a "generalised machine"
- Measurements on insulators using a high voltage Schering Bridge

Room 006:
- Differential Protection of a three-phase transformer
- Characteristics of a "loss of field" relay
- Characteristics of an "overcurrent relay"
- Power transmission measurements using a model line
- Measurement of the dielectric strength of transformer oil.

Room 009:
- Computer-controlled measurements on electrical networks
- Measurement of harmonic response of filters
- Signal recovery using a lock-in amplifier
- Bridge measurement of characteristics of dielectrics
- Slotted-line measurements
- Transmission and reflection of short pulses in a co-axial line
- Calibration of a Wattmeter
- Bridge measurement of iron loss
- Measurement of transients using a Digital Storage Oscilloscope

Room 012:
- Use of a small Digital Computer
- Steady state and transient response of RLC circuits
- A.C. Bridge measurements
- Measurement of four-terminal resistance
- Calibration of a voltmeter
- Measurement of Peak, average and r.m.s. values
- Measurement of voltage using an a.c. potentiometer
- Measurement of non-linear resistance
- Integration and differentiation of waveforms using RC circuits
- Tests on a single-phase transformer
- Locus Diagrams of RL and RC circuits

Room 014:
- Demonstration of Alarm Systems
- Industrial Applications of Electronics
- Electrical Safety and Earthing
- Electrical Measurements
- Semi-conductor devices - applications.

Room 016:
- Electrostatics - demonstration
- Sources of Illumination
- Principles of motive power
- Sources of Electrical Energy

Room 026:
- Display of student photographs and project work.

Open Days — 1979